

REMARKS

This application has been carefully reviewed in light of the Office Action dated January 3, 2003 (Paper No. 5). Claims 5, 6, 8 and 9 are in the application, with Claim 5 being the sole independent claim. Reconsideration and further examination are respectfully requested.

It is noted that this Amendment has been prepared in accordance with the revised format set forth in the Pre-Official Gazette notice entitled "Amendments in a Revised Format Now Permitted" signed January 31, 2003, posted on the USPTO web site.

A new title has been provided.

The specification was objected to for including the reference numeral (11), not shown in Figs. 7 or 8. A Letter Transmitting Formal Drawings accompanies this Amendment, with which a substitute drawing sheet is being submitted. In the substitute drawing sheet, the reference numeral (11) has been added to Fig. 7. Accordingly, withdrawal of the objection to the specification is respectfully requested.

Objections were lodged against Figs. 7 and 8 for not containing a "Prior Art" legend. In the substitute drawing sheet, a "Prior Art" legend has been added to each of Figs. 7 and 8. Accordingly, withdrawal of these drawings objections is respectfully requested.

The drawings were also objected to for allegedly not showing a feature recited by Claim 9. Applicant submits that every feature of Claim 9, as amended herein, is shown in the drawings in sufficient detail for a proper understanding of the invention. See, for example, Fig. 6.

Claim 9 was objected to for allegedly being of improper dependent form. Claim 9 has been amended to attend to the issues raised in the Office Action. Accordingly, withdrawal of the objection is respectfully requested.

Claims 6, 8, 10 and 11 were rejected under 35 U.S.C. § 112, second paragraph. Claims 10 and 11 have been cancelled without prejudice or disclaimer of subject matter and without conceding the correctness of the rejection. Claim 6 has been carefully reviewed and rewritten to attend to the issue raised in the Office Action. With regard to Claim 8, Applicant submits that phrase “at least one of” is a permissible expression, since it presents no uncertainty or ambiguity with respect to the question of scope or clarity of the claim. See MPEP § 2173.05(h) and MPEP § 2173.05(h)II. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression of format of claim which makes clear the boundaries of the subject matter for which protection is sought. See MPEP § 2173.03. Claim 8 clearly recites that at least one of (i) a layer for preventing reflection of external light and (ii) a layer for preventing multiple reflection is formed between the lead and the cover glass. In view of the foregoing, reconsideration and withdrawal of the Section 112, second paragraph, rejection are respectfully requested.

Claim 4 was rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,132,772 (Fetty); Claims 1, 3, 5, 6 and 8 were rejected under 35 U.S.C. § 103(a) over Applicant's admitted prior art (Figs. 7 and 8) in view of Fetty; Claim 2 was rejected under 35 U.S.C. § 103(a) over Applicant's admitted prior art in view of Fetty and U.S. Patent No. 4,987,474 (Yasuhara); Claim 7 was rejected under 35 U.S.C. § 103(a) over Fetty in view of Yasuhara; Claim 9 was rejected under 35 U.S.C. § 103(a) over Fetty in view of Yasuhara

and U.S. Patent No. 5,591,960 (Furukawa); Claim 9 was rejected under 35 U.S.C. § 103(a) over Applicant's admitted prior art in view of Fetty and Furukawa; and Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) over Fetty in view of Applicant's admitted prior art. In response, Claims 1 to 4, 7, 10 and 11 have been cancelled without prejudice or disclaimer of subject matter and without conceding the correctness of their rejections. Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention concerns an image pickup apparatus which includes a lead of a flexible wiring film, an image pickup element chip electrically connected to the lead at an electrical connection point, and a cover glass for protecting a surface of the image pickup element chip. The lead, the image pickup element chip, and the cover glass are sealed with an ultraviolet-curing resin in a peripheral portion of the image pickup element chip. The lead has a hole formed in a portion of the lead which is in contact with the ultraviolet-curing resin and which is between the electrical connection point and an outer end of the lead.

Thus, according to one feature of the invention, the lead has a hole formed in a portion of the lead which is in contact with the ultraviolet-curing resin and which is between the electrical connection point and an outer end of the lead. By virtue of this feature, it is possible to decrease the difference in flow rates between resin flowing on the lead and resin flowing on other portions, thereby helping to prevent the generation of bubbles on the inner lead tip. See page 7, lines 5 to 17 of the present specification.

Conventionally, when a lead, an image pickup element chip, and a cover glass are sealed with a resin in a peripheral portion of the image pickup element chip, the flow rate of resin on the lead differs from the flow rate of resin on the other portions. The

difference in flow rates can result in the formation of bubbles on the inner lead tip, which weakens the adhesive force between the resin and the lead, causing defects in the image pickup apparatus. See page 6, line 5 to page 7, line 4 of the present specification.

Fetty is not seen to teach or suggest at least the foregoing feature.

According to Fetty, a hole (30) is formed over a protrusion of a bump (26), so that a lead (28) can be guided into the appropriate position during bonding. See abstract and Fig. 3 of Fetty. Thus, in Fetty, the hole (30) is formed at the electrical connection point.

This is in contrast to the present invention, where the lead has a hole formed in a portion of the lead which is between the electrical connection point and an outer end of the lead. For example, in the embodiment shown in Figs. 2 and 3 of the present invention, the hole (6) is formed between the electrical connection point (the bump 4) and the outer end of the lead (3b).

Fetty also is not seen to teach or suggest the feature that the lead, the image pickup element chip, and the cover glass are sealed with an ultraviolet-curing resin in a peripheral portion of the image pickup element chip. As a result, Fetty does not recognize the need to decrease the difference between the flow rate of resin on a lead and the flow rate of resin on other portions.

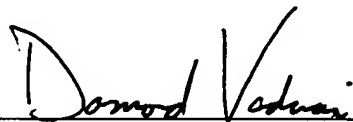
Similarly, Yasuhara is not seen to disclose the feature that the lead, the image pickup element chip, and the cover glass are sealed with an ultraviolet-curing resin in a peripheral portion of the image pickup element chip.

Applicant's admitted prior art and Furukawa are not seen to remedy the deficiencies of Fetty and Yasuhara. It is therefore respectfully requested that the Section 102 and 103 rejections be withdrawn.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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